

**What is claimed is:**

1. A digital magnetic recording apparatus, comprising:

an analog-to-digital converter converting an input audio signal into digital data;

a formatter formatting the audio signal in an appropriate size to be stored in respective recording sectors of a magnetic tape selected from among a first plurality of sectors of the magnetic tape;

a recording selection unit selectively transmitting the input audio signal to one selected from among said formatter and said analog-to-digital converter, in dependence upon a type of the audio signal; and

a control unit controlling a head to record output data from said analog-to-digital converter on a second plurality of sectors of the magnetic tape and to record output data from said formatter on the first plurality of sectors of the magnetic tape, said first and second pluralities of sectors being distinguishable.

2. The apparatus of claim 1, further comprising an encoder converting the input

audio signal into a predetermined digital data, and providing the digital data to said formatter.

3. The apparatus of claim 2, the predetermined digital data being MP3 data.

4. The apparatus of claim 2, the predetermined digital data being AC-3 data.

1           5.     The apparatus of claim 2, further comprising a discrimination unit detecting a type  
2     of the input audio signal, the detected type being one type selected from among a plurality of  
3     types of data, said recording selection unit being controlled in dependence upon result of said  
4     detecting performed by said discrimination unit.

1           6.     The apparatus of claim 5, said plurality of types of data including at least MP3  
2     data, analog data, and digital data which is not MP3 data.

1           7.     The apparatus of claim 6, the magnetic tape including at least said first plurality of  
2     sectors, said second plurality of sectors, and general video sectors, said general video sectors  
3     storing video data, said second plurality of sectors being general audio sectors storing audio data  
4     corresponding to the video data, said first plurality of sectors being redundant audio sectors.

1           8.     The apparatus of claim 1, further comprising a discrimination unit discriminating  
2     a type of the input audio signal, said recording selection unit being controlled in dependence  
3     upon result of said discriminating performed by said discrimination unit.

1           9.     The apparatus of claim 1, the magnetic tape including at least said first plurality of  
2     sectors, said second plurality of sectors, and general video sectors, said general video sectors  
3     storing video data, said second plurality of sectors being general audio sectors storing audio data  
4     corresponding to the video data, said first plurality of sectors being redundant audio sectors.

10. A digital magnetic reproducing apparatus, comprising:

a digital-to-analog converter converting a first type of audio data read from a magnetic tape to an analog audio signal;

a deformatter deformatting a second type of audio data read from the magnetic tape;

a decoder decoding deformatted data output from said deformatter; and

a reproduction selection unit selectively transmitting general audio data read from the magnetic tape to one selected from among said deformatter and said digital-to-analog converter, in dependence upon a type of the general audio data, said general audio data including said first and second types of audio data.

11. The apparatus of claim 10, said deformatting of said second type of audio data corresponding to dividing and grouping said second type of audio data to produce data having a predetermined structure.

12. The apparatus of claim 11, further comprising a discrimination unit detecting said type of the general audio data, said reproduction selection unit being controlled in dependence upon the detected type resulting from said detecting performed by said discrimination unit.

13. The apparatus of claim 12, further comprising a memory temporarily storing an output of said deformatter, and providing the stored output to said decoder.

1           14.    The apparatus of claim 13, the data having the predetermined structure  
2           corresponding to data selected from among MP3 data and AC-3 data.

1           15.    The apparatus of claim 13, said decoder inputting the data having the  
2           predetermined structure and outputting analog data.

1           16.    The apparatus of claim 11, the data having the predetermined structure  
2           corresponding to data selected from among MP3 data and AC-3 data.

1           17.    The apparatus of claim 10, further comprising a discrimination unit detecting said  
2           type of the general audio data, said reproduction selection unit being controlled in dependence  
3           upon the detected type resulting from said detecting performed by said discrimination unit.

1           18.    The apparatus of claim 10, further comprising a memory temporarily storing an  
2           output of said deformatter, and providing the stored output to said decoder.

1           19.    The apparatus of claim 10, said second type of audio data being provided to said  
2           deformatter corresponding to MP3 data.

1           20.    A method recording different types of audio data on a magnetic tape for a digital  
2           magnetic recording/reproducing device, comprising:

3 detecting a type of an input audio signal;

4 when a format of the input audio signal does not correspond to a recording format of  
5 recording sectors of the magnetic tape, formatting the input audio signal in an appropriate size to  
6 be stored in the recording sectors of the magnetic tape; and

7 recording a plurality of different types of audio signals in respective recording sectors of  
8 the magnetic tape.

1 21. The method of claim 20, the magnetic tape including general audio sectors storing  
2 general audio data, general video sectors storing video data corresponding to said general audio  
3 data, and said recording sectors recording said formatted data, said recording sectors being  
4 redundant audio sectors, said redundant audio sectors being distinguishable from said general  
5 audio and video sectors.

1 22. The method of claim 20, further comprising encoding the input audio signal into  
2 predetermined digital data, said encoding being performed after said detecting and before said  
3 formatting.

1 23. The method of claim 22, said predetermined digital data being MP3 data.

1 24. The method of claim 22, said encoding being performed according to a selection.

1           25.    The method of claim 24, said selection corresponding to a selection performed by  
2   a user.

1           26.    The method of claim 25, the magnetic tape including general audio sectors storing  
2   general audio data, general video sectors storing video data corresponding to said general audio  
3   data, and said recording sectors recording said formatted data, said recording sectors being  
4   redundant audio sectors, said redundant audio sectors being distinguishable from said general  
5   audio and video sectors.

1           27.    A method reproducing plural types of audio data stored on respective recording  
2   sectors of a magnetic tape for a digital magnetic recording/reproducing device, comprising:

3           detecting at least one type of audio data read from said respective recording sectors of the  
4   tape, said at least one type including at least a first type and a second type;

5           performing one selected from among digital-to-analog conversion and deformatting, said  
6   digital-to-analog conversion being selected and converting digital audio data read from the tape  
7   to analog audio data when said detecting detects a first type of audio data, said deformatting  
8   being selected and deformatting the audio data read from the tape when said detecting detects a  
9   second type of audio data, said first and second types being distinguishable;

10          decoding said deformatted audio data; and

11          reproducing one selected from among the digital-to-analog converted audio data and the  
12   decoded audio data.

1           28.    The method of claim 27, said deformatting and decoding being performed before  
2   said reproducing.

1           29.    The method of claim 28, said second type of data corresponding to a  
2   predetermined structure of digital data, said first type of data corresponding to digital data other  
3   than said predetermined structure of digital data.

1           30.    The method of claim 29, said predetermined structure of digital data  
2   corresponding to MP3 data.

1           31.    The method of claim 30, said decoding corresponding to generating analog data  
2   from the MP3 data.

1           32.    The method of claim 29, said decoding corresponding to generating analog data  
2   from the digital data having the predetermined structure.

1           33.    The method of claim 27, said deformatting corresponding to generating MP3 data  
2   from the digital audio data read from the tape.